means for continuously capturing an actual visual scene within the vicinity of said apparatus wherein said means for capturing said visual scene is achieved by an image capturing unit;

means for buffering up a plurality of captured visual scenes having a finite number of storage elements over-written repeatedly using a first-in-first-out mechanism such that a finite storage can be used to hold a plurality of said visual scenes continuously;

means for preserving buffered scenes long enough to be stored and viewed after an incident has occurred; and

means for manually triggering a preservation of captured scenes, wherein said means for manually triggering is a manual activation action, said manual activation action including taking a sequence of continuous images of said visual scene, wherein said preservation of said buffered scenes is achieved by prohibiting older said buffered scenes from being erased and replaced by new captured scenes after a preprogrammed elapsed time period such that said plurality of said visual scenes are comprised of a number of said captured scenes captured a number of seconds before and after said manual activation action.

2. A digital incident recording apparatus as recited in claim 1, further comprising means for temporary storage using a volatile memory device.

4.   A digital incident recording apparatus as recited in claim 1 wherein said means for preserving buffered scenes comprises a persistent storage unit chosen from the group consisting of a persistent memory device where contents are directly written into, a persistent memory device where contents are transferred from a volatile memory device where images were first written into, a volatile memory device having a continued power supply so as to retain its contents, and a non-memory persistent storage media.

5.   A digital incident recording apparatus as recited in claim 4 wherein said means for buffering up said captured scenes is achieved by feeding said captured scenes into said persistent storage unit.

6.   A digital incident recording apparatus as recited in claim 2 wherein said means for buffering up said captured scenes is achieved by feeding said captured scenes into said volatile memory device.

8.   A digital incident recording apparatus as recited in claim 1, wherein said means for continuously capturing said actual visual scene has separate means for buffering up said captured scenes and means for preserving said buffered scenes.

9. A digital accident recording apparatus as recited in claim 1, wherein said image capturing unit is used to capture scenes of a forward view as well as a backward view to include activities of an operator who operates a transportation system which is equipped with said digital accident recording apparatus.

11. A digital incident recording apparatus as recited in claim 1 further comprising housing means to protect said buffered scenes from being destroyed by an environmental factor, wherein said environmental factor includes temperature, impact, shaking, electrical shock and moisture.

12. A digital incident recording apparatus as recited in claim 1, further comprising:

means for capturing sound waves in synchronization with said captured visual scene;

means for buffering said captured sound waves using said first-in-first-out mechanism in the same manner as for said visual scene; and

means for preserving said buffered sound waves in the same manner as for said visual scene.

13. A digital incident recording apparatus as recited in claim 11, further comprising:

an installation means which allows said apparatus to be taken out of an installation base and to be used as a recording apparatus outside of a transportation system, wherein said installation means is selected from the group consisting of attaching said apparatus onto a surface and inserting said apparatus into a housing unit large enough to hold said apparatus.

14.   A digital incident recording apparatus as recited in claim 11, further comprising:

an installation means which allows said apparatus to be taken out of an installation base and to be used as a hand-held recording apparatus, wherein said installation means is selected from the group consisting of attaching said apparatus onto a surface and inserting said apparatus into a housing unit large enough to hold said apparatus.

15.   A digital incident recording apparatus as recited in claim 1, wherein said means for buffering and means for preserving are coordinated via a control unit chosen from the group consisting of a micro-processor, a micro-controller, a DSP, a PAL, an EPLD, a FPGA and a programmable logic circuit.

16.   (Four Times Amended)   A method for digitally recording incidents using a finite storage for capturing unanticipated events, said method comprising the steps of:

continuously capturing an actual visual scene in real-time and converting said actual visual scene into digital form;

continuously buffering a plurality of captured images from said capturing step using a first-in-first-out mechanism;

manually triggering a permanent preservation of a plurality of frames of said buffered images; wherein said permanent preservation of a plurality of frames of visual scenes is achieved by prohibiting older said images from being erased and replaced by newer images such that said plurality of frames stored are composed of a number of images captured so many seconds before, during and after said triggering; and

preserving said buffered images when said manual triggering step occurs.

18. A method for digitally recording incidents as recited in claim 16 further comprising the step of:

detecting an external event so as to generate an automatic triggering step, wherein said external event is chosen from the group consisting of physical impact, sudden change in momentum, shock wave, sudden change in sound wave amplitude, an unusual occurrence of objects in said captured images, a distance between said objects in said captured images, and an atypical movement of said objects; wherein said automatic triggering step includes a permanent preservation of a plurality of frames of visual scenes

achieved by prohibiting older images from being erased and replaced by newer images such that said plurality of frames stored are composed of a number of images captured so many seconds before, during and after said triggering.

20. A method for digitally recording incidents as recited in claim 16, further comprising the steps of:

capturing surrounding sound wave corresponding to said visual scene;

buffering said captured sound wave using said first-in-first-out mechanism in the same manner as for said visual scenes; and

preserving said buffered sound wave when said triggering occurs.

22. A digital incident recording apparatus as recited in claim 1, wherein said manual activation is any human induced triggering event.

23. A digital incident recording apparatus as recited in claim 1, further comprising means for automatically triggering a preservation of said buffered scenes, wherein said means for automatically triggering is a mechanism chosen from the group consisting of software mechanisms, firmware mechanisms, and hardware mechanisms, wherein said firmware or software mechanisms comprise programmable logic instructions that fire off a signal in response to an external event, wherein said hardware mechanisms comprise at least one sensor capable of detecting a physical event, wherein said physical event is at

least one of a physical impact, sudden change in momentum, shock wave, and sudden change in sound wave amplitude, wherein said automatic preservation of said buffered scenes is achieved by prohibiting older said buffered scenes from being erased and replaced by new captured scenes after a preprogrammed elapsed time period such that said plurality of said visual scenes are comprised of a number of said captured scenes captured a number of seconds before and after said physical event.

24. A method for digitally recording incidents as recited in claim 16, wherein said manually triggering is any human induced activation event.

25. A digital incident recording apparatus as recited in claim 1, wherein said manual activation further includes taking snap shots of a visual scene and suspending and preventing an additional visual scene from being captured so that said buffered scenes are preserved.